#### (19) World Intellectual Property Organization International Bureau



# 

#### (43) International Publication Date 22 January 2004 (22.01.2004)

## PCT

English

## (10) International Publication Number WO 2004/008261 A3

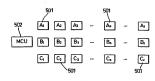
- (51) International Patent Classification?: G05B 19/042.
- H04B 7/00, G05B 15/02, H02J 9/00
  (21) International Application Number:
  - PCT/GB2003/003006
- (22) International Filing Date: 10 July 2003 (10.07.2003)
- (25) Filing Language: English
- (26) Publication Language:
- (30) Priority Data: 0215924.2 0304748 7
  - 0215924.2 10 July 2002 (10.07.2002) GB 0304748.7 1 March 2003 (01.03.2003) GB 0306095.1 18 March 2003 (18.03.2003) GB
- (71) Applicant (for all designated States except US): STG AEROSPACE LIMITED [GB/GB]; Ecotech Innovation Business Park, Turbine Way, Swaffham, Norfolk PE37 7XD (GB).
- (72) Inventors; and

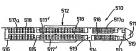
(75) Inventors/Applicants (for US only): STOKES, Peter, David [GB/GB]; STG Aerospace Limited, 21 Turbine Way, Swaffham, Norfolk PE37 7XD (GB). LEACH, Daniel [GB/GB]; STG Aerospace Limited, 21 Turbine Way, Swaffham, Norfolk PE37 7XD (GB). BRAITH-WAITE, Stephen, John [GB/GB]; STG Aerospace Limited, 21 Turbine Way, Swaffham, Norfolk PE37 7XD (GB).

- (74) Agent: BARKER BRETTELL; 138 Hagley Road, Edgbaston, Birmingham B16 9PW (GB).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CC, CV, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, DI, LL, BI, SB, FK, EK, GK, FK, RK, CZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MX, MI, NO, NZ, OM, PO, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UC, VC, NY, UZ, AZ, MZ, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SI, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TI, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, Er, TL, UJ, MC, II, FI RO, SE, SI, SK, TR), OAPI patent (BR BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TOS)

[Continued on next page]

### (54) Title: IMPROVEMENTS IN OR RELATING TO NETWORKED COMMUNICATION DEVICES





(57) Abstract: An aircraft emergency lighting system comprises a plurality of light units (501) arranged to guide passengers to and to identify exits (313, 514, 515, 516) an emergency. The light units (501) communicate wirelessly with a remote master control unit (502) operable from the occipic (131) using a low yower spread spectrum signal centred on a single frequency to avoid interference with enboard aircraft control and communication systems. The light units (501) are arranged to receive and transmit any signal to and from the master controller (502) whereby only some of the light units (501) need by within range of the master controller (502).

The light units (501) comprise battery operated LEDs and cycle between an inoperable (sleep) condition and an operable (awake) condition to conserve power consumption and extend battery life.

A 1908261 A



#### Published:

- with international search report
- before the expiration of the time limit for amending the ning of each regular issue of the PCT Gazette. claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 8 April 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the begin-



A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G05B19/042 H04B7/00 G05B15/02 H02J9/00 According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED documentation searched (classification system followed by classification symbols) IPC 7 G05B H04B H02J Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Flacinosic data have consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, COMPENDEX, INSPEC, IBM-TDB C. DCCUMENTS CONSIDERED TO BE RELEVANT Category \* Citation of document, with Indication, where appropriate, of the relevant passages Relevant to claim No. US 2001/055965 A1 (RENALDI PAT ET AL) 1,2,23 X 27 December 2001 (2001-12-27) γ paragraph '0123! 3-7 paragraph '0145! - paragraph '0147! paragraph '0212! - paragraph '0216! Υ US 2002/044042 A1 (KNUDSEN JESPER ET AL) 3-7 18 April 2002 (2002-04-18) abstract; claim 1 US 5 907 491 A (CANADA RONALD G ET AL) X 1,14,15, 25 May 1999 (1999-05-25) the whole document -/--Patent family members are listed in annex. X Further documents are listed in the continuation of box C. To later document published after the International filing date or priority date and not in conflict with the application buf died to understand the principle or theory underlying the invention. Special categories of cited documents : "A" document defining the general state of the aut which is not considered to be of particular relevance "No document of particular relevance; the claimed invention cannot be considered now for cannot be considered in service and the constituted to involve as inventive size yields the document is alternal services; the claimed invention of particular relevance; the claimed invention to comment of particular relevance; the claimed invention document is comfined with one or more claim, such documents, such combination being obvious to a person skilled in the cet. "E" earlier document but published on or after the International \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) \*O\* document referring to an oral disclosure, use, exhibition or document published prior to the international filing date but later than the priority date claimed "A" document member of the same patent family Date of mailing of the international search report Date of the actual completion of the International search n 9, 02, 04 27 January 2004 Name and mailing address of the ISA Authorized officer European Patent Office, P.B. 5818 Patentilaen 2 NL - 2280 HV Filipwijk Tal. (431-70) 340-2040, Tx. 31 651 epo nt, Fax: (431-70) 340-3018 Gardella, S

Form PCT/ISA/210 (second sheet) (July 1902)



		PC1/4B 03/03006
Calegory *	ation) DOCUMENTS CONSIDERED TO BE RELEVANT  Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/080027 A1 (CONLEY WILLIAM H) 27 June 2002 (2002-00-27) paragraph '00011 - paragraph '0017! paragraph '00331 - paragraph '0037! paragraph '0043!; figure 1	1,20-23
Α	HARMAN R M: "Wireless solutions for aircraft condition based maintenance systems" 2002 IEEE AEROSPACE CONFERENCE PROCEEDINGS, vol. 6, 9 - 16 March 2002, pages 2877-2886, XP010604856 Big Sky, MT, USA ISBN 0-7803-7231-X the whole document	1,14
A	DE 41 34 034 A (TELEFUNKEN SYSTEMTECHNIK) 16 July 1992 (1992-07-16) the whole document	1,14
A	ALENA R ET AL: "Modeling a wireless network for international space station" IEEE AEROSPACE CONFERENCE PROCEEDINGS 2000, vol. 11, 18 - 25 March 2000, pages 223-228, XF010518477 * Section 1. INTRODUCTION * Section 2. WIRELESS NETWORK ARCHITECTURE ON THE ISS *	*
A	J. MARTSEN: "BLUETOOTH - The universal radio interface for ad hoc, wireless connectivity" [ERICSSON REVIEW, 'Online! no. 3, 1998, pages 110-117, XP000783249 Retrieved from the Internet: (URL:http://www.ericsson.com/about/publications/review/1998_03/14.shtml> 'retrieved or 2003-10-31! the whole document	1 .
	. 10 (postbustlen et severet albeing) (AM) 1900)	



Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)	
This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:	
Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely.	
Claims Nos.:     because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:	
Glaims Nos.:     because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 8.4(a).	
Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)	_
This international Searching Authority found multiple inventions in this international application, as follows:	
see additional sheet	
As all required additional search floor were timely paid by the applicant, this international Search Report covers all searchable claims.	
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.	
3. X As only some of the required additional search fees were timely paid by the applicant, this international Search Report covers only those claims for which fees were paid, specifically claims Noc.:  inventions 1, 3, 4 and 5	
No required additional search fees were timely gold by the applicant. Consequently, this international Search Report is restricted to the invention first mentioned in the delans, it is covered by delans Nos.:	
Remark on Protest  The additional search fees were accompanied by the applicant's protest.  X No protest accompanied the payment of additional search fees.	

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

 Claims: 1, 2, 3 and 23, and all other claims when directly or indirectly depending on claims 2, 3 or 23

A communication protocol for a system comprising a plurality of networked devices arranged to communicate wirelessly with a master controller using spread spectrum communication.

 Claims: 8 when directly depending on claim 1, and succeeding claims when directly or indirectly depending on claim 8

A system comprising a plurality of networked devices arranged to communicate wirelessly with a master controller, whereby each device is autonomously powered.

 Claims: 14 when directly depending on claim 1, and succeeding claims when directly or indirectly depending on claim 14

A system comprising a plurality of networked devices arranged to communicate wirelessly with a master controller, whereby the devices have distinct operation modes for energy saving purposes.

 Claims: 20 when directly depending on claim 1, and succeeding claims when directly or inderectly depending on claim 20

A system comprising a plurality of networked devices arranged to communicate Wirelessly with a master controller, whereby the master controller interrogates the networked devices to get their address.

 Claims: 22 when directly depending on claim 1, and succeeding claims when directly or indirectly depending on claim 22

A system comprising a plurality of networked devices arranged to communicate wirelessly with a master controller, which carries out diagnostics through a test signal.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

 Claims: 24 when directly depending on claim 1, and succeeding claims when directly or indirectly depending on claim 24; and claims 35 and 36

The use of a system comprising a plurality of networked devices arranged to communicate wirelessly with a master controller in an emergency lighting system.

 Claims: 31 when directly depending on claim 1, and succeeding claims when directly or indirectly depending on claim 31

A system comprising a plurality of networked devices arranged to communicate wirelessly with multiple master controllers.

8, Claim: 34 when directly depending on claim 1

A system comprising a plurality of networked devices arranged to controller, whereby the master controller is operated manually.

information on patent family members

Internal Application No PCT/GB 03/03006

US 2002044042 A1 18-04-2002 AT 255733 T 15-12-200. AU 759777 B2 AU 4828901 A 22-10-200 AU 4828901 A 22-10-200 AU 4828901 A 22-10-200 CA 2391405 A1 19-10-200 CA 2391405 A1 19-10-200 CA 2391405 A1 19-10-200 WM 0177764 A2 18-10-200 WM 0177764 A2 18-10-200 WM 0177764 A2 18-10-200 EFP 1279050 A2 12-03-200 EFP 1279051 A2 18-10-200 US 2002047774 A1 12-10-200 US 5907491 A 25-05-1999 US 5854994 A 29-12-1998 EFP 1023662 A1 09-10-200 WM 948779 A1 19-10-200 WM 9810393 A1 12-03-1998 US 2002080027 A1 27-06-2002 WONE							
US 2002044042 A1 18-04-2002 AT 255733 T 15-12-200. AU 759777 B2 AU 4828901 A 22-10-200 AU 4828901 A 22-10-200 AU 4828901 A 22-10-200 CA 2391405 A1 19-10-200 CA 2391405 A1 19-10-200 CA 2391405 A1 19-10-200 WM 0177764 A2 18-10-200 WM 0177764 A2 18-10-200 WM 0177764 A2 18-10-200 EFP 1279050 A2 12-03-200 EFP 1279051 A2 18-10-200 US 2002047774 A1 12-10-200 US 5907491 A 25-05-1999 US 5854994 A 29-12-1998 EFP 1023662 A1 09-10-200 WM 948779 A1 19-10-200 WM 9810393 A1 12-03-1998 US 2002080027 A1 27-06-2002 WONE					Patent family member(s)		
AU 759777 B2 01-05-2003 AU 4828901 A 23-10-2001 CA 2341642 A1 18-10-2001 DE 60101388 D1 18-10-2001 DE 0101388 D1 18-10-2001 DE 0101380 D1 18-10-2001 D1 18-10-20	US 2	001055965	A1	27-12-2001			20-09-1999 10-09-1999
EP   1023662 A1	US 2	002044042	A1	18-04-2002	AU AU CA CA DE WO WO EP EP JP	759777 B2 4828801 A 4828901 A 2391405 A1 2441642 A1 60101388 D1 0177764 A2 0178307 A2 1290506 A2 1275037 A2 2003530741 T 20020448 A	15-12-2003 01-05-2003 23-10-2001 23-10-2001 18-10-2001 15-01-2004 18-10-2001 12-03-2003 15-01-2003 14-10-2003 10-12-2002 25-04-2002
					EP US WO DE EP WO	1023662 A1 6301514 B1 9845779 A1 932890 T1 0932890 A1	29-12-1998 02-08-2000 09-10-2001 15-10-1998 09-03-2000 04-08-1999 12-03-1998
DE 4134034 A 16-07-1992 DE 4134034 A1 16-07-1992	US 2	.002080027 	A1 	27-06-2002	NONE		
	DE 4	134034	Α	16-07-1992	DE	4134034 A1	16-07-1992